

REMARKS

Claims 1 through 67 are currently pending in the application and subject to an Election of Species Restriction Requirement.

Applicants hereby elect, without traverse, to prosecute species the species of invention designated as species IaI by the Examiner and as set forth in claims 1 through 11, illustrated in drawing FIGS. 1-6 and 10-16.

Applicants consider claim 1 to be generic, and note that upon allowance of a generic claim, claims 12 through 67 depending therefrom in a non-elected species would also be allowable. Applicants further submit that claims 1-3 are generic as to both subspecies IaI and IaII.

Applicants note that claims 64 through 67 were not identified as belonging to any particular species as set forth by the Examiner. Applicants submit that concurrent examination of claims 64 through 67 along with the elected species of claims 1 through 11 would not impose an undue burden upon the Patent Office since, as identified by the Examiner, claims 1 through 11 are drawn to the attachment of the tray carrier on the lift mechanism, and since claims 64 through 67 are similarly drawn to the configuration of the tray. However, should the Examiner find that claims 64 through 67 are drawn to a distinct species of invention, Applicants maintain the election of claims 1 through 11 as set forth above herein.

Applicants request an action on the merits of claims 1 through 11 and 64 through 67.

Previously Submitted Information Disclosure Statement

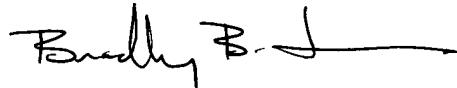
Please note that an Information Disclosure Statement was filed in the above-referenced application on December 4, 2001, but that an initialed copy of the Form PTO-1449 (14 sheets) that accompanied that Information Disclosure Statement has not yet been returned to the undersigned attorney. It is respectfully requested that the information cited in the Information Disclosure Statement and listed on the Form PTO-1449 be considered and made of record in the above-referenced application and that an initialed copy of the Form PTO-1449 evidencing such consideration be returned to the undersigned attorney.

Preliminary Amendment

Applicants' undersigned attorney notes the filing herein of a Preliminary Amendment on July 9, 2002, which filing was not acknowledged in the outstanding Office Action. Should the Preliminary Amendment have failed for some reason to have been entered in the Office file, Applicants' undersigned attorney will be happy to have a true copy thereof hand-delivered to the Examiner.

In view of the foregoing, it is respectfully requested that each of claims 1 through 11 and 64 through 67 be considered on the merits.

Respectfully submitted,



Bradley B. Jensen
Registration No. 46,801
Attorney for Applicants
TRASKBRITT
P.O. Box 2550
Salt Lake City, Utah 84110-2550
Telephone: 801-532-1922

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DETAILED ACTION

Response to Amendment

Applicant's Amendments and accompanying remarks submitted as Paper No. 19 on 3-26-01 have been entered and carefully considered. The amendments are not found to patentably distinguish the claims over the prior art and Applicant's arguments are not found persuasive of patentability for reasons set forth herein below.

Drawings

The corrected drawings were received on 3-26-01. These drawings are acceptable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 68-76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brooks et al. in view of Kuronen (3,917,983) and Sauter et al. (5,911,461).

With respect to Claim 68, Brooks et al. teaches a method of making a plurality of IC packages carried in a tray comprising providing at least one tray carrying a plurality of IC packages (Figure 1, item 190 and 182); lowering the at least one tray from a position to a second position (Figure 1, Item 190); moving the at least one tray horizontally to a third position (Figure 1, item 210); raising the at least one tray to a fourth position (Column 6, Lines 34-45); marking the IC packages carried by the at least one tray (Column 5, Lines 10-20); lowering the at least one tray to the third position (Column 6, Lines 65-66); moving the at least one tray horizontally to a fifth position (Figure 1, Item 214); and raising the at least one tray to a sixth position (Column 7, Lines 30-38).

Kuronen teaches stacking wafers (abstract).

Sauter et al. teaches the use of a tray for a wafer (abstract).

Brooks et al., Kuronen, and Sauter et al. are analogous art because they are from the same field of endeavor, which is methods of manufacturing wafers. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the process of Brooks et al. to utilize stacking the wafers in order to manufacture complex, high speed electronic systems (see Kuronen Column 1, lines 9-15); and further to modify the combined inventions of Brooks et al. and Kuronen to utilize a tray for the wafer in order to reduce the danger of damage to the semiconductor wafer (see Sauter et al. Column 1, Lines 40-50).

With respect to Claim 69, the teachings of Brooks et al., Kuronen, and Sauter et al. are the same as relied upon in the rejection of Claim 68. Brooks et al. teaches the tray comprises a plurality of vertically stacked trays at the first position and further comprising removing a lowermost tray from the plurality of stacked trays to lower the removed tray to the second position and proceeding the removed tray therefrom through the third, fourth, fifth, and sixth positions (Figure 1, Item 190).

With respect to Claim 70, the teachings of Brooks et al., Kuronen, and Sauter et al. are the same as relied upon in the rejection of Claim 69. Brooks et al. teaches raising the removed tray to the bottom of a vertical stack comprising a plurality of trays at the sixth position (Column 7, Lines 30-40).

With respect to Claim 71, the teachings of Brooks et al., Kuronen, and Sauter et al. are the same as relied upon in the rejection of Claim 68. Brooks et al. teaches raising the removed tray into an enclosure at the fourth position and substantially concurrently sealing the enclosure against light leakage therefrom (Figure 1, Item 24).

With respect to Claim 72, the teachings of Brooks et al., Kuronen, and Sauter et al. are the same as relied upon in the rejection of Claim 68. Brooks et al. teaches the marking is laser light (Column 6, Line 36).

With respect to Claim 73, the teachings of Brooks et al., Kuronen, and Sauter et al. are the same as relied upon in the rejection of Claim 72. Brooks et al. teaches the marking is effected simultaneously in two fields, each of the fields approximating one half of an area of the removed tray (Column 6, Lines 35-40, and Figure 4, items 18 and 20).

With respect to Claim 74, the teachings of Brooks et al., Kuronen, and Sauter et al. are the same as relied upon in the rejection of Claim 73. The examiner takes official notice that inspecting a product immediately after processing is well known in the art at the time of the invention in order to ensure product quality.

With respect to Claim 75 the teachings of Brooks et al., Kuronen, and Sauter et al. are the same as relied upon in the rejection of Claim 68. Brooks et al. teaches tilting the tray before the tray reaches the fourth position (Column 9, Lines 15-32).

With respect to Claim 76 the teachings of Brooks et al., Kuronen, and Sauter et al. are the same as relied upon in the rejection of Claim 75. Brooks et al. teaches imparting force to the removed, tilted tray to cause the packages carried in the recesses in the removed tilted tray to reach a substantially common alignment for marking (Column 9, Lines 15-30).

Response to Arguments

Applicant argues the examiner's characterization of the art as methods of manufacturing wafers is incorrect (Page 5, fourth full paragraph). Brooks et al. et al. teaches a wafer transport

system (abstract); Sauter et al. teaches a carrier for a semiconductor wafer (abstract); and Kuronen teaches a method for fabricating a multiwafer electrical circuit (abstract). It is the examiner's position that all three references clearly teach the manufacturing/processing of wafers. The rejection is maintained despite applicants traversal.

Applicant argues the cassettes do not travel through the various positions as recited by claim 68 (Page 6, first paragraph). As stated in the previous office action, Brooks et al. et al. teaches a method of making a plurality of IC packages carried in a tray comprising providing at least one tray carrying a plurality of IC packages (Figure 1, item 190 and 182); lowering the at least one tray from a position to a second position (Figure 1, Item 190); moving the at least one tray horizontally to a third position (Figure 1, item 210); raising the at least one tray to a fourth position (Column 6, Lines 34-45); marking the IC packages carried by the at least one tray (Column 5, Lines 10-20); lowering the at least one tray to the third position (Column 6, Lines 65-66); moving the at least one tray horizontally to a fifth position (Figure 1, Item 214); and raising the at least one tray to a sixth position (Column 7, Lines 30-38). The rejection is maintained despite applicants traversal.

Applicant argues Brooks et al. teaches away from using a tray in its transport system (Applicant's response, Page 6, first full paragraph). It is the examiner's position that Brooks et al. teaches away from techniques that makes the vacuum chamber difficult to seal (see Brooks et al. Column 1, Line 38). Brooks et al. further explains that rotary carousels, endless conveyor belts, and movable carriages make sealing difficult because the vacuum must be reestablished

after each wafer is introduced which slows down the manufacturing process (see Brooks et al. Column1 , Lines 40-52). It is the examiner's position that Brooks et al. does not teach away from using the carrier plate as taught by Sauter et al. The carrier plate would be small and thin enough to fit through the valves of Brooks et al. in order to minimize the pressure loss (see Brooks et al. Column 5, Lines 45-67). Large rotary carousels and bulky movable carriages would not fit be able to fit through the valves in order to maintain the vacuum. The rejection is maintained despite applicants traversal.

Applicant argues Brooks fails to teach the marking of the package (Page 6, second full paragraph). Brooks et al. clearly teaches selectively irradiating portions of the wafer with an ion beam to modify its electronic characteristic (see Brooks et al. Column 1, Lines 30-35). It is the examiner's position that the "selectively irradiating" step of Brooks et al. is sufficient to "mark" the package. The rejection is maintained despite applicants traversal.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined inventions of Brooks et al. and Kuronen to utilize a tray for

the wafer in order to reduce the danger of damage to the semiconductor wafer (see Sauter et al. Column 1, Lines 40-50). The rejection is maintained despite applicants traversal.

Applicant argues Brooks et al. does not teach a stack of trays and the lowermost tray therefrom. As stated in the previous office action, the teachings of Brooks et al., Kuronen, and Sauter et al. are the same as relied upon in the rejection of Claim 68. Kuronen teaches stacking wafers (abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the process of Brooks et al. to utilize stacking the wafers in order to manufacture complex, high speed electronic systems (see Kuronen Column 1, lines 9-15). The rejection is maintained despite applicants traversal.

Applicant argues Brooks et al. does not teach sealing against “light leakage” (Column 8, third full paragraph). It is the examiner’s position that the sealing of an air tight or vacuum inherently seals against light leakage. The rejection is maintained despite applicants traversal.

Applicant argues Brooks et al. does not teach marking with laser light (Page 8, Fourth full paragraph). It is the examiner’s position that ion beams can, in a broad sense, be referred to as laser beams. Support for this can be found in Schumacher (4,644,126 Column 3, Lines 5-12). The rejection is maintained despite applicants traversal.

Applicant argues Brooks et al. does not teach a plurality of ic packages (Page 8, fourth full paragraph). As stated in the previous office action, Kuronen teaches stacking wafers (see

Kuronen abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the process of Brooks et al. to utilize stacking the wafers in order to manufacture complex, high speed electronic systems (see Kuronen Column 1, lines 9-15). Further, Kuronen clearly teaches each wafer carrying multiple chips (see Kuronen Column 6, Lines 31-67).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 703-308-0667. The examiner can normally be reached on M-Th 7AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 703-308-3318. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-305-7718 for regular communications and 703-305-5885 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

jj
July 4, 2003
